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Q factor

Word:

Word

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- [Factor V and Genetic Test](#)
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- [Factor V Leiden Disorder](#)
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[www.DubinMedical.com](#)

Q factor is a measure of the "quality" of a resonant system. Resonant systems respond to frequencies close to the natural frequency much more strongly than they respond to other frequencies. On a graph of response versus frequency, the bandwidth is defined as the 3 dB change in level besides the center frequency. The definishion of the bandwidth BW as the "full width at half maximum" or FWHM is wrong.

The Q factor is defined as the resonant frequency (center frequency) f_0 divided by the bandwidth BW:

$$Q = \frac{f_0}{f_2 - f_1} = \frac{f_0}{BW}$$

Bandwidth BW = $f_2 - f_1$, where f_2 is the upper and f_1 the lower cutoff frequency.

In a tuned radio frequency receiver (TRF) the Q factor is:

$$Q = \frac{1}{R} \sqrt{\frac{L}{C}}$$

In optics, the optical Q factor of a resonant cavity is the ratio of energy stored to energy dissipated in the cavity. If the Q factor of a laser's cavity is abruptly changed, the laser can be induced to emit a pulse of light; this technique is known as Q-switching.

Other uses

In marketing and pop culture commentary, Q factor is sometimes used as a casual synonym for Q Score.

External link

Conversion: Quality factor Q to 'bandwidth per octaves' and 'bandwidth per octaves' N to quality factor Q

Some articles mentioning "Q factor":

ATC code B02	Economic rent	Fall factor	Hageman factor	Power factor
ATX	Factor programming	Form factor	Hyperfinite type II-1	Scale factor
Coagulation	language	Growth factor	factor	Sigma factor
Cryoprecipitate	Factor V Leiden	Guanylate cyclase	Hyperfinite type II-infinity	Trial division
	Factor VIII		factor	
			K-factor	

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Q (disambiguation)	Q (Star Trek)	Q quotient
Q (James Bond)	Q code	Q rating
Q (magazine)	Q Continuum	Q Score
	Q fever	
	Q Gospel	
	Q Magazine	
	Q multimedia console	

<u>Q (novel)</u>	<u>Q document</u>	<u>Q programming language</u>	<u>Q ship</u>
<i>Full Dictionary Browser</i>			
<u>PZL-Mielec M-18 Dromader</u>	<u>Q (enc.)</u>	<u>Q fever</u>	<u>Q ship (enc.)</u>
<u>(enc.)</u>	<u>Q (disambiguation) (enc.)</u>	<u>Q fever (enc.)</u>	<u>Q switching (enc.)</u>
<u>PZL-Swidnik M-18 Dromader</u>	<u>Q (James Bond) (enc.)</u>	<u>Q Gospel (enc.)</u>	<u>Q test (enc.)</u>
<u>(enc.)</u>	<u>Q (magazine) (enc.)</u>	<u>Q Magazine (enc.)</u>	<u>Q&A (Alias episode) (enc.)</u>
<u>PZL 23 Karas (enc.)</u>	<u>Q (novel) (enc.)</u>	<u>Q multimedia console (enc.)</u>	<u>Q&A website (enc.)</u>
<u>PZL 37 Los (enc.)</u>	<u>Q (programming language)</u>	<u>Q programming language</u>	<u>Q'NIAL (comp.)</u>
<u>PZPR (enc.)</u>	<u>(enc.)</u>	<u>(enc.)</u>	<u>Q*Bert (enc.)</u>
<u>PZU AZS Olsztyn (enc.)</u>	<u>Q (Star Trek) (enc.)</u>	<u>Q Public License (enc.)</u>	<u>Q, the book (enc.)</u>
<u>PZU Polfa Pabianice (enc.)</u>	<u>Q code (enc.)</u>	<u>Q quotient (enc.)</u>	<u>Q- Brighton Local via</u>
<u>Pzzl (enc.)</u>	<u>Q Continuum (enc.)</u>	<u>Q rating (enc.)</u>	<u>Broadway Express (enc.)</u>
<u>Q</u>	<u>Q document (enc.)</u>	<u>Q Score (enc.)</u>	<u>Q-5 (enc.)</u>
<u>Q (comp.)</u>			

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